Minutes for Rule 21 Working Group Meeting #74
February 16, 2006
Bishop Ranch (BEW Engineering)
San Ramon, CA

There were 8 Technical Sub-group members in attendance in person; no-one participated by telephone. The next meeting of the Technical-Sub Group is scheduled for 9:30 am, March 21, 2005 at SDG&E in San Diego. This meeting will be a two-day meeting with the second meeting day conducted in a hotel meeting room nearby, location TBA. This will be the last monthly meeting, as subsequent meetings will be scheduled on a quarterly basis.

Collins	Matthew	SCE	Palomo	Jose	CEC
Goh	Jeff	PG&E	Steeley	William	EPRI
Lacey	Scott	SCE	Vaziri	Moh	PG&E
Newmiller	Jeff	BEW Eng.	Whitaker	Chuck	BEW Eng.

General

This meeting focused primarily on issues relating to the report on interconnection with secondary network distribution systems, per DG OIR CPUC decision D.05-08-013.

FCE/SatCon Certification:

Reviewed the FCE/Satcon harmonics situation.

In response to an open question on "piece testing" from the previous meeting, Chuck W. clarified that the existing Rule 21 requires that the equipment be tested to the most current version of UL1741, which was updated on November 7th, 2005 to require use of IEEE 1547.1 test protocol, which requires that harmonics and islanding testing be conducted at full rated power. Testing at reduced power (only some units operating) effectively redefines the power rating of the equipment as that lower value.

IEEE 1547 Meeting Review:

Scott Lacey, Moh Vaziri, and Chuck Whitaker offered their perspectives on the meeting. Four documents were being discussed:

- P1547.2 "Draft Application Guide for Interconnecting Distributed Resources with Electric Power Systems",
- P1547.3 "Draft Guide For Monitoring, Information Exchange, and Control of Distributed Resources Interconnected with Electric Power Systems",
- P1547.4 "Draft Guide for Design, Operation, and Integration of Distributed Resource Island Systems with Electric Power Systems", and
- P1547.6 "Draft Recommended Practice For Interconnecting Distributed Resources With Electric Power Systems Distribution Secondary Networks".

Scott Lacey: P1547.2 is in shape where it has a good chance of being completed before the original Project Authorization Request reaches its time limit. Most work was focused on the introductory sections. P1547.3 status is uncertain (Scott did not attend this session), based on hearsay that before the meeting that it was looking good, and afterward it looked like there was a lot of work left to do. P1547.4 has a lot of material to work with so they should be able to make good progress once they can agree on the problem, but the sticking points were primarily associated with where the boundaries of the "island" would be, with some participants being adamant that intentional islanding internal to the customer premises should be addressed, while other participants were advocating that management of such configurations was already addressed by existing reliable power management standards.

Chuck Whitaker: There is one other draft document, P1547.5 "Draft Technical Guidelines for Interconnection of Electric Power Sources Greater than 10MVA to the Power Transmission Grid", but this is being handled by the Power Engineering Society, completely independently from the rest of the 1547 series development, which is managed under Standards Coordinating Committee 21.

Moh Vaziri: Pointed out that PG&E already handles generating installations larger than 10MVA by a process similar to the Rule 21 process (Rule 21 specifically takes exception to this limitation in IEEE 1547). Regarding P1547.6, Bill Feero presented a range of issues with network interconnections, along with some illuminating examples. Moh was surprised to learn that in Boston they do not set trip delays for protection relays even in the presence of equipment such as elevators that are known to backfeed power briefly during dynamic braking, which, in certain circumstances, can cause tripping of Network Protectors with no low level backfeed delay. For such situations PG&E requires instantaneous response for fault-level backfeed conditions, but allows low level backfeed to have a delay to avoid nuisance tripping. Moh is still investigating how Boston accommodates such loads without allowing low-level delays. At the other end of the permissiveness spectrum, Con Ed in New York City has 30000 network transformers connected in all-but-undocumented configurations NY State legislation requires them to allow PV interconnections. Requirements for such interconnections are defined by the local utility, and Con Ed, in particular, seems to have an accommodating approach to evaluating interconnection applications.

Combined Technologies Sidebar:

Moh Vaziri and Jeff Goh requested clarification from the WG regarding whether there was any further clarification of the review of an addition of generation to an existing GF requires review of both the existing generation and the proposed added generation. Response was new applications should be reviewed in the context of existing generation. While it was felt that the initial review process and technical requirements of Rule 21 both adequately addressed this issue, it was suggested that, the application forms might be revised so that the applicant is specifically asked to include details of any existing DG in the system description and one-line diagrams. This would clarify to everyone that preexisting equipment would be included in the review and that it would be considered in the same manner as if both new and old DG were installed simultaneously. Additional clarification may be required regarding grandfathering of certification requirements of the existing equipment.

T134 Network Interconnection Report

T134.2 (Section 4) Identify CA Networks (Dave Brown)

Dave Brown was not able to attend this meeting, but Chuck Whitaker showed the existing list of networks and discussed some summary results: 0.17% of all California customers are served through network power connections, but because these customers draw larger than average load, they represent 1.1% of the California energy load. These results (# of customers in CA and total demand) were questioned when presented at the January meeting but Dave said he was unable to come up with more credible estimates.

T134.X (Section 5.2) Existing Network Interconnection Requirements
Jeff Goh forwarded PG&E's Bulletin for "Secondary Spot Network System Requirements for Distributed Generation Interconnection", which will be included in the report as an appendix.

T134.7 (Section 6) Identify Problems And Solutions (Moh Vaziri)
The WG reviewed the issues list compiled by Moh (from the DUIT report, Mass DG Collaborative report, several 1547.6 documents, Bill Feero's presentation, and an EPRI report) point-by-point, and was able to identify what the concern was in almost all cases. Where some "issues" appeared to combine possibly separate concerns, the group recommended separating the issues into separate items. Many of the items from the different sources appeared to have significant overlap, but Moh and Chuck accepted an action to finish merging these issues into a single comprehensive list based on the DUIT table, which will be included in the Report. This is section is the furthest from completion, and potentially the most important, in that how these issues are solved, mitigated, or avoided will define the technical requirements for Network Interconnection. The complete issues document with the original source material will be maintained as a separate resource document.

T134.8 (Section 7) Investigate Costs (Bill Steeley)
Bill Steeley briefly presented his review of interconnection costs. Bill's writeup included some clarifying modifications from the previous version but essentially the same quantitative results. The group offered a few more suggestions, which Bill agreed to incorporate.

T134.9 (Section 8.1.2) Proposed Area Network IRP (Moh Vaziri)
Group reviewed PG&E "TrailBlazer" interconnection requirements, which had been modified slightly since the last meeting. These are intended to provide potential Initial Review Process requirements for Simplified interconnection to Area Networks.

Chuck will work with the Section authors to get a complete draft for full committee review in early April.

Submitted by Jeff Newmiller